

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: David A. Morgenstern                      Art Unit: 1795  
Serial No.: 10/687,541  
Filed: October 16, 2003  
Confirmation No.: 7748  
For: USE OF METAL SUPPORTED COPPER CATALYSTS FOR REFORMING  
ALCOHOLS  
Examiner: Alix Elizabeth Echelmeyer

July 16, 2008

**STATEMENT OF THE SUBSTANCE OF THE INTERVIEW**

TO THE COMMISSIONER FOR PATENTS,

SIR:

The undersigned attorney thanks Examiner Echelmeyer and Supervisory Examiner Tsang-Foster for the courteous interview conducted on June 18, 2008.

Since a response to the last Office action (final Office action mailed January 4, 2008) had already been filed on May 5, 2008, applicant submits this Statement setting forth a complete and accurate record of the substance of the interview conducted June 18, 2008. This Statement is intended to supplement the  
\* Interview Summary (copy attached) prepared by the Examiner and provided to the undersigned attorney immediately following the conclusion of the interview.

**Rejection under 35 U.S.C. 103(a)**

The only claim discussed during the interview was independent claim 27.

Applicant's undersigned representative pointed out that the pending claims are directed to gas-phase alcohol reforming

processes characterized in part by the reforming catalyst used in the process and not to the reforming catalyst *per se*.

Applicant's representative submitted that the invention set forth in claim 27 is patentable over Marino et al. in view of U.S. Patent No. 2,892,801 (Sargent) and that the Office had failed to establish all the elements of a *prima facie* case of obviousness in support of the assertion that the cited references (or common knowledge) leads one skilled in the art to replace the  $\gamma$ -Al<sub>2</sub>O<sub>3</sub> supporting structure of Marino et al. with the Raney nickel supporting structure of Sargent. In particular, it was pointed out that Marino et al. merely suggests to the skilled artisan to incorporate nickel in a ceramic-supported copper catalyst by depositing nickel onto the surface of the catalyst and that such surface treatment of the ceramic support to form NiAl<sub>2</sub>O<sub>4</sub> does not direct one skilled in the art to consider replacing the support with an entirely different support (e.g., a metal support) for use in the experimental ethanol reforming process of Marino et al. with any reasonable expectation of success.

Applicant's representative also noted that the teaching of Sargent is directed primarily to liquid-phase hydrogenation reactions (e.g., hydrogenation of glucose). Sargent fails to teach or suggest that the catalyst he discloses is suitable for gas-phase dehydrogenation of an alcohol as called for in the pending claims.

It was further pointed out by applicant's representative that U.S. Patent No. 3,960,898 (Hodge) and "Safety Data for tert-butyl alcohol" cited in the final Office action dated January 4, 2008 do not provide any evidence that one skilled in the art would recognize that the catalyst of Sargent could be used for gas-phase dehydrogenation. In particular, Hodge does

not teach dehydrogenation of tertiary butyl alcohol as asserted by the Office.

There was a discussion of applicant's evidence of unexpected results as submitted in the Response filed October 11, 2007 in response to the Office action mailed June 14, 2007. It was agreed that the position taken by the Office in the final Office action dated January 4, 2008 that applicant must compare his results to the combination of the disclosures of Marino et al. and Sargent was erroneous and that the evidence previously referred to by the applicant was potentially relevant to the obviousness inquiry. However, the Examiners raised questions regarding the applicant's data and the comparison made to the data shown in Marino et al., including (1) why is the CH<sub>4</sub> % in applicant's data sometimes reported in excess of 100% (See Example 5, Tables 5 and 6 of applicant's disclosure)?; and (2) what is the impact, if any, of the difference in the reaction time periods for the compared data (e.g., 60-315 minutes in Table 2 of Marino et al. vs. 10-310 hours for applicant's data in Tables 5 and 6)? Applicant's undersigned representative acknowledged these questions, but was unable to provide a response during the interview without closer examination of the data with respect to the questions posed. In any event, applicant's representative indicated that answers to these questions could be explored and provided, as necessary, should the Office establish a *prima facie* case of obviousness in support of the rejection under 35 U.S.C. 103(a).

At the conclusion of the interview, the Examiners indicated that they would review the Office's position with respect to whether a *prima facie* case of obviousness had been established.

Applicant looks forward to the next action on the merits and response on the record to the arguments set forth in the Response to Final Office Action, filed May 5, 2008.

Respectfully submitted,

/Vincent M. Keil/

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VMK/sxm  
\*Attachment

Filed via EFS

## Interview Summary

Application No.

10/687,541

Applicant(s)

MORGENSTERN, DAVID A.

Examiner

Alix Elizabeth Echelmeyer

Art Unit

1795

All participants (applicant, applicant's representative, PTO personnel):

(1) Alix Echelmeyer. *AE*

(3) Vincent Keil. *VMK*

(2) Susy Tsang-Foster. *ASF*

(4) James Davis. *JED*

Date of Interview: 18 June 2008.

Type: a) ☐ Telephonic b) ☐ Video Conference  
c) ☒ Personal [copy given to: 1) ☐ applicant 2) ☒ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.

If Yes, brief description: \_\_\_\_\_

Claim(s) discussed: 27.

Identification of prior art discussed: Marino et al., Sargent et al.

Agreement with respect to the claims f) ☐ was reached. g) ☒ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Discussed combination of Marino et al. and Sargent et al., particularly the motivation provided by the Office to combine the references. Also discussed Applicant's argument of unexpected results and the comparison of the data sets of Marino et al. and the instant invention.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

*Alix Elizabeth Echelmeyer*  
Examiner's signature, if required